UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P O Box 1450
Alexandria, Virginia 22313-1450
www uspto gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,886	02/15/2008	Chenglong Liu	DEQ10337P00030US	1547

32116 7590 07/06/2009
WOOD, PHILLIPS, KATZ, CLARK & MORTIMER
500 W. MADISON STREET
SUITE 3800
CHICAGO, IL 60661

EXAMINER	
WOOD, JR, STEVEN A	

ART UNIT	PAPER NUMBER
2416	

MAIL DATE	DELIVERY MODE
07/06/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/586,886	LIU, CHENGLONG	
	Examiner	Art Unit	
	STEVEN WOOD	2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 June 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 July 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1. The instant application having Application No. **10/586886,** which was filed on 2/6/2005 is presented for examination by the examiner.

Claim Objections

2. **Claims 18 & 19** are objected to because of the following informalities: these claims recite the limitation "the operation user identifier word." There is insufficient antecedent basis for this limitation in the claims. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claims 1, 2, 3, 5 & 6** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. **Claim 1** recites the limitation "data layers" several times. The expression "data layers" is unclear and therefore fails to provide adequate detail of the technical features implicated. Examiner suggests that Applicant uniformly use the terminology accepted in the art "data block," as Applicant employs in Par. 33 of the specification.

6. **Claim 2** recites the limitations “network structures” and “application modes,” which Applicant fails to sufficiently define either in the claims or in the specification in order to avoid their constituting vague content resulting in difficulty in ascertaining what criteria could legitimately be used for accomplishing “data layer” divisions.

7. **Claim 3** recites the limitations "NE configuration data layer", "service configuration data layer" and "table configuration data layer,” which Applicant fails to sufficiently define either in the claims or in the specification in order to avoid their constituting vague content resulting in difficulty in ascertaining what criteria could legitimately be used for accomplishing “data layer” divisions.

8. **Claim 5** recites the limitation "synchronization modes,” which Applicant fails to sufficiently define either in the claims or in the specification in order to avoid it constituting vague content resulting in difficulty in ascertaining what criteria could legitimately be used for accomplishing “data layer” divisions.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. **Claims 1 – 6, 8 – 20** are rejected under 35 U.S.C. 102(b) as being anticipated by Kidder, et al., (US 6880086 B2) (hereinafter Kidder).

11. Regarding **claim 1**, Kidder discloses a method for synchronizing configuration data between an Element Management System (EMS) and a Network Element (NE), wherein the configuration data of the NE is divided into configuration data layers, so that different configuration data layers comprise different configuration data sets of minimum units, (Col. 152, lines 28 – 32; data is stored within configuration database 42 (**configuration data**) as a series of containers (**divided into configuration data layers**). Since the configuration database is a relational database, data is stored in tables and containment is accomplished using pointers from lower level tables (children) to upper level tables (parents) (**so that difference configuration data layers comprise different configuration data sets of minimum units**)), and the minimum unit identifier word is provided for each configuration data layer to identify the changes of the configuration data in the layer, (Col. 152, lines 49 – 54; configuration database includes a managed device table 983 (FIG. 60a), a chassis table 988 (FIG. 60b), a shelf table 989 (FIG. 60c), a slot table 990 (FIG. 60d), a card table 47' (FIG. 60e), and a port table 49' (FIG. 60f) (**for each configuration data layer**). The master control driver (MCD) enters the assigned unique physical identifier (PID) (**the minimum unit identifier word is provided**) for each physical component in a row (i.e., record) in one of the tables; Col. 153, lines 47 – 53; MCD 38 continues to take physical inventories of the network device to determine if physical components have been added or removed. When changes are detected, master MCD 38 updates the tables (e.g., card table 47' and port table 49') accordingly (**to identify the changes of the configuration data in**

the layer)), comprising: if the configuration data of the NE is changed, the NE changing the minimum unit identifier word of the configuration data layer corresponding to the changed configuration data, (Col. 153, lines 47 – 53; MCD 38 continues to take physical inventories of the network device to determine if physical components have been added or removed. When changes are detected **(if the configuration data of the NE is changed)**, master MCD 38 updates the tables (e.g., card table 47' and port table 49') accordingly **(NE changes the minimum unit identifier word of the configuration data layer corresponding to the changed configuration data))**, the EMS obtaining the changed minimum unit identifier word from the NE, (Col. 153, lines 53 – 58; and through the active query feature, the configuration database **(from the NE)** updates an external NMS database (e.g., 61, FIG. 59) and notifies the NMS server. Each time a physical component is changed, the NMS server sends the NMS client a full set of updated proxies; Fig. 61b; Col. 155, lines 21 – 23; each proxy includes the PID 992a **(EMS obtaining the changed minimum unit identifier word)** and some or all of the attribute data 992b from the corresponding managed object), and the EMS comparing the received minimum unit identifier word with the minimum unit identifier word stored in it to determine which configuration data layer the changed configure data belongs to and the changes of the configuration data, (Col. 160, lines 7 – 10; using the unique PIDs as primary keys allows for faster response times by the NMS server **(EMS)**. First the PIDs **(received minimum unit identifier word)** are used to quickly check local memory 987a **(compared with the one stored in it)**--perhaps hash tables in a cache; Col. 157, lines 18 – 20; if the PID is not found in local memory 987a, then the NMS server uses the PID as a primary key to retrieve the physical data **(to determine which configuration data layer the changed configuration data belongs to))**, and the EMS synchronizing the changed

configuration data of corresponding NE into it according to the determined result, (Col. 10, line 66 – Col. 11, line 6; maintaining a primary or master repository of data within each network device ensures that the NMS **(EMS)** and network device are always synchronized with respect to the state of the configuration **(synchronizing the changed configuration data)**. Replicating changes made to the primary database within the network device **(of corresponding NE)** to any secondary data repositories, for example, NMS database 61 **(into it)**, ensures that all secondary data sources are quickly updated and remain in lockstep synchronization **(according to the determined result)**).

12. Regarding **claim 2**, the rejection of claim 1 is incorporated and only further limitations will be addressed. Kidder discloses the method, wherein, the step of dividing the configuration data in the NE into configuration layers comprises: according to different network structures and application modes, (Col. 16, lines 15 – 27; code generation system creates a view identification (id) and an application programming interface (API) 338 for each process that requires configuration data. For example, a view id and an API may be created for each ATM application 339a-339n, each SONET application 340a-340n, each MPLS application 342a-342n and each IP application 341a-341n. In addition, a view id and API is also created for each device driver process, for example, device drivers 343a-343n, and for modular system services (MSS) 345a-345n (described below), for example, a Master Control Driver (MCD), a System Resiliency Manager (SRM), and a Software Management System (SMS) **(according to different network structures and application modes)**), dividing the configuration data in the NE into at least one configuration layer, (Col. 152, lines 28 – 32; data is stored within configuration database 42 as a

series of containers **(dividing the configuration data in the NE)**. Since the configuration database is a relational database, data is stored in tables and containment is accomplished using pointers from lower level tables (children) to upper level tables (parents) **(into at least one configuration layer)**).

13. Regarding **claim 3**, the rejection of claim 2 is incorporated and only further limitations will be addressed. Kidder discloses the method, wherein, the step of dividing the configuration data in the NE into at least one configuration layer comprises: dividing the configuration data into an NE configuration data layer, a service configuration data layer and a table configuration data layer respectively, (Col. 152, lines 28 – 29; data is stored within configuration database 42 as a series of containers (**dividing the configuration data**); Col. 22, lines 29 – 34; GUI may also include a configuration/service status window 897 for displaying current configuration (**into an NE configuration data layer**) and service provisioning (**a service configuration data layer**) details. Again, these details are provided to the NMS client by the NMS server, which reads the data from the network device's configuration database; Col. 152, lines 29 – 32; since the configuration database is a relational database, data is stored in tables and containment is accomplished using pointers from lower level tables (children) to upper level tables (parents); Col. 152, lines 62 – 65; the unique PID corresponding to a parent table is a pointer and provides data "containment" by linking each child table to its parent table (i.e., provides a table hierarchy) **(and a table configuration data layer)**).

14. Regarding **claim 4**, the rejection of claim 3 is incorporated and only further limitations will be addressed. Kidder discloses the method, further comprising: dividing the configuration data in the table configuration data layer into row content layers, (Col. 152, lines 49 – 60; configuration database includes a managed device table 983 (FIG. 60a), a chassis table 988 (FIG. 60b), a shelf table 989 (FIG. 60c), a slot table 990 (FIG. 60d), a card table 47' (FIG. 60e), and a port table 49' (FIG. 60f). The MCD enters the assigned unique PID for each physical component (**dividing the configuration data in the configuration data layer**) in a row (i.e., record) in one of the tables. Consequently, each unique PID serves as a primary key within the configuration database for the row /data corresponding to each physical component. Where available, the MCD also enters data representing attributes (e.g., card type, port type, relative location, version number, etc.) for the component in each table row (**into row content layers**)).

15. Regarding **claim 5**, the rejection of claim 1 is incorporated and only further limitations will be addressed. Kidder discloses the method, wherein, the step of dividing the configuration data in the NE into configuration data layers comprises: according to different synchronization modes corresponding to the configuration data, (Col. 16, lines 15 – 27; code generation system creates a view identification (id) (**dividing the configuration data in the NE into at least one layer**) and an application programming interface (API) 338 for each process that requires configuration data. For example, a view id and an API may be created for each ATM application 339a-339n, each SONET application 340a-340n, each MPLS application 342a-342n and each IP application 341a-341n. In addition, a view id and API is also created for each device driver process, for example, device drivers 343a-343n, and for modular system services (MSS) 345a-

345n (described below), for example, a Master Control Driver (MCD), a System Resiliency Manager (SRM), and a Software Management System (SMS) **(according to different synchronization modes corresponding to the configuration data)**), dividing the configuration data in the NE into at least one layer, (Col. 152, lines 28 – 32; data is stored within configuration database 42 as a series of containers **(dividing the configuration data in the NE)**. Since the configuration database is a relational database, data is stored in tables and containment is accomplished using pointers from lower level tables (children) to upper level tables (parents) **(into at least one configuration layer)**).

16. Regarding **claim 6**, the rejection of claim 1 is incorporated and only further limitations will be addressed. Kidder discloses the method, wherein, the step of setting the minimum unit identifier word assigned for each of the configuration data layer comprises: respectively setting a sequence number identifier word and/or a network management table identifier word and/or a mixed identifier word for each configuration data layer as the minimum unit identifier word, (Col. 12, lines 7 – 13; NMS server augments SNMP traps by providing them over the conventional User Datagram Protocol (UDP) as well as over Transmission Control Protocol (TCP), which provides reliable traps. Each event is generated with a sequence number **(setting a sequence number identifier word)** and logged by the data collector server in a system log database for in place context with system log data).

17. Regarding **claim 8**, the rejection of claim 1 is incorporated and only further limitations will be addressed. Kidder discloses the method, wherein, the step of changing the minimum unit

identifier word of the configuration data layer corresponding to the changed configuration data comprises: determining which configuration data layer the changed configuration data belongs to, (Col. 157, lines 18 – 20; if the PID is not found in local memory 987a, then the NMS server uses the PID as a primary key to retrieve the physical data **(determining which configuration data layer the changed configuration data belongs to)**), modifying the minimum unit identifier word of the configuration data layer as well as those above the layer, (Col. 152, lines 53 – 65; master control driver (MCD) enters **(modifying)** the assigned unique physical identifier (PID) for each physical component in a row (i.e., record) in one of the tables. Consequently, each unique PID serves as a primary key (**minimum unit identifier word**) within the configuration database for the row /data corresponding to each physical component. Where available, the MCD also enters data representing attributes (e.g., card type, port type, relative location, version number, etc.) **(of the configuration data layer)** for the component in each table row. In addition, with the exception of the managed device table, each row includes a unique PID corresponding to a parent table. The unique PID corresponding to a parent table is a pointer and provides data "containment" by linking each child table to its parent table (i.e., provides a table hierarchy); Col. 153, lines 62 – 65; a change to only one physical component requires changes to the proxy for that component and any related parent and/or children proxies **(as well as those above the layer)**).

18. Regarding **claim 9**, the rejection of claim 1 is incorporated and only further limitations will be addressed. Kidder discloses the method, further comprising: determining which EMS has changed the configuration data of the NE, ((144); Configuration Changes tab 967b may display

configuration changes made to the network device including event, time, configurer and workstation identification **(determining which EMS)** from where the change was made **(has changed the configuration data of the NE)**), and setting an operation user identifier word corresponding to the EMS, (Figs. 11b- 11g; (195); adding or changing a user profile, causes the NMS client (e.g., NMS client 850a, FIG. 11w) to send the information to an NMS server (e.g., NMS server 851a), and the NMS server uses the received information to update **(setting)** various tables in NMS database 61. In one embodiment, for a newly added user, the NMS server assigns **(setting)** a unique logical identification number (LID) to the user **(operation user identifier word)** and adds a new row in a User table 1010 (FIGS. 11p and 11w) in the NMS database including the assigned LID 1010a and the username 1010b, password 1010c and group access level 1010d provided by the NMS client **(corresponding to the EMS)**), the EMS obtaining the operation user identifier word from the NE, (Col. 12, lines 62 – 64; each NMS server **(EMS)** gathers **(obtaining)** the name, IP address and status **(an operation user identifier word)** of other NMS servers **(from the NE)** in the telecommunication network), and the EMS comparing the received operation user identifier word with the operation user identifier word stored in it to judge whether it is itself has changed the configuration data, ((59); since many NMS clients may connect to the same NMS server, the NMS server first checks its local cache **(EMS comparing the received operation user identifier word with the operation user identifier word stored in it)** to determine if it is already managing the network device for another NMS client **(to judge whether it is itself has changed the configuration data)**), if not, executing the step of synchronizing the configuration data, ((59); if so, **(if not)** the NMS server sends data from the cache to the NMS client. Configuration changes received by an NMS server--from either an

NMS client or directly from the network device's configuration database when changes are made through the network device's CLI interface--are sent by the NMS server to any other NMS clients connected to that server and managing the same network device (**executing the step of synchronizing the configuration data**)), otherwise, ending the procedure, (Col. 153, lines 56 – 60; each time a physical component is changed, the NMS server sends the NMS client a full set of updated proxies to ensure that the NMS client is fully synchronized with the network device. Alternatively, only those proxies that are affected may be updated (**otherwise, ending the procedure – i.e. proxies for this EMS do not need to be synchronized**)).

19. Regarding **claim 10**, the rejection of claim 9 is incorporated and only further limitations will be addressed. Kidder discloses the method, wherein, the minimum unit identifier word assigned for each configuration data layer further comprises: the operation user identifier word, (Fig. 13b; Col. 71, lines 20 – 30; NMS 60 reads card table 47 and port table 49 to determine what hardware is available in computer system 10. The NMS assigns a logical identification number (LID) (**operation user identifier word**) 98 (FIGS. 14b and 14c) to each card and port and inserts these numbers in an LID to PID Card table (LPCT) 100 and an LID to PID Port table (LPPT) 101 in configuration database 42. Alternatively, the NMS could use the PID (**comprised in minimum unit identifier word**) previously assigned to each board by the MCD (**assigned for each configuration data layer**). However, to allow for hardware redundancy, the NMS assigns an LID and may associate the LID with at least two PIDs, a primary PID 102 and a backup PID 104), if the configuration data of the NE is changed, the NE determining which configuration data layer the changed configuration data belongs to, (Col. 72, lines 18 – 27; software

applications can be notified of changes to configuration database **(if the configuration data of the NE is changed)** records in which they are interested. The NMS database establishes an active query for all configuration database records to insure it is updated with all changes. The master SRM establishes an active query with configuration database 42 for LPCT 100 and LPPT 101. Consequently, when the NMS adds to or changes these tables, configuration database 42 sends a notification to the master System Resiliency Manager (SRM) and includes the change **(NE determining which configuration data layer the changed data belongs to)**, and modifying the minimum unit identifier words of the configuration data layer and configuration data layers above the layer, (Col. 152, lines 53 – 65; master control driver (MCD) enters **(modifying)** the assigned unique physical identifier (PID) for each physical component in a row (i.e., record) in one of the tables. Consequently, each unique PID serves as a primary key **(minimum unit identifier word)** within the configuration database for the row /data corresponding to each physical component. Where available, the MCD also enters data representing attributes (e.g., card type, port type, relative location, version number, etc.) **(of the configuration data layer)** for the component in each table row. In addition, with the exception of the managed device table, each row includes a unique PID corresponding to a parent table. The unique PID corresponding to a parent table is a pointer and provides data "containment" by linking each child table to its parent table (i.e., provides a table hierarchy); Col. 153, lines 62 – 65; a change to only one physical component requires changes to the proxy for that component and any related parent and/or children proxies **(as well as those above the layer)**), and the NE further modifying the operation user identifier words comprised in the minimum unit identifier words, ((278); master SRM then uses card table 47 to determine the physical location of boards

associated with new or changed LIDs **(NE further modifying the operation user identifier words comprised in the minimum unit identifier words)** and then tells the corresponding slave SRM of its assigned LID(s)).

20. Regarding **claim 11**, the rejection of claim 1 is incorporated and only further limitations will be addressed. Kidder discloses the method, wherein, the NE sends a configuration changed event notification to EMSs, which comprises the changed minimum unit identifier word, (Col. 152, lines 49 – 57; configuration database includes a managed device table 983 (FIG. 60a), a chassis table 988 (FIG. 60b), a shelf table 989 (FIG. 60c), a slot table 990 (FIG. 60d), a card table 47' (FIG. 60e), and a port table 49' (FIG. 60f). The MCD enters the assigned unique PID for each physical component in a row (i.e., record) in one of the tables. Consequently, each unique PID serves as a primary key **(minimum unit identifier word)** within the configuration database for the row /data corresponding to each physical component; Col. 153, lines 51 – 55; when changes are detected, master MCD 38 updates the tables (e.g., card table 47' and port table 49') accordingly **(changed minimum unit identifier word comprises)**, and through the active query feature **(configuration changed event notification)**, the configuration database **(sent by NE)** updates an external NMS database (e.g., 61, FIG. 59) and notifies the NMS server **(to EMS)**; Col. 160, lines 7 – 12; using the unique PIDs as primary keys allows for faster response times by the NMS server. First the PIDs are used to quickly check local memory 987a--perhaps hash tables in a cache. If the data is not in local memory, the PIDS are used as primary keys to perform a fast data retrieval from configuration database 42).

21. Regarding **claim 12**, the rejection of claim 11 is incorporated and only further limitations will be addressed. Kidder discloses the method, wherein, the step of NE sending configuration changed event notification to EMSs comprises: the NE postponing (delay) sending the configuration changed event notification to the EMSs for a predefined period of time, (Col. 11, lines 10 – 13; network administrator may configure periodic replication (**NE postponing sending the configuration changed event notification to the EMSs**). For example, data from the master embedded database (i.e., the configuration database) can be uploaded daily or hourly (**for a predefined period of time**)), if the configuration is changed again during the predefined time, the NE will not send the configuration changed event notification until the new change(s) is (are) finished, (Col. 26, lines 24 – 36; an uncompleted configuration (series of related "sets") (**if the configuration is changed again during the predefined time**) will leave the network device in a partially configured state (e.g., "dangling" partial configuration records) that is different from the configuration state in the central data repository being used by the NMS. This may cause errors or a network device and/or network failure. To avoid this situation, the configuration database executes groups of SQL commands representing one configuration change as a relational database transaction, such that none of the changes are committed to the configuration database (**NE will not send the configuration changed event notification**) until all commands are successfully executed (**until the new change(s) is (are) finished**). The configuration database then notifies the server as to the success or failure of the configuration change and the server notifies the client).

22. Regarding **claim 13**, the rejection of claim 11 is incorporated and only further limitations will be addressed. Kidder discloses the method, wherein, the step of the NE sending the configuration changed event notification to the EMSs comprises: if the NE continuously receives configuration commands from multiple different management devices or a batch processing configuration commands from a single management device, (Col. 26, lines 19 – 28; current network management systems make configuration changes in a central data repository and pass these changes to network devices using SNMP "sets". Since changes made through SNMP are committed immediately (i.e., written to the data repository), an uncompleted configuration (series of related "sets") **(a batch processing configuration commands from a single management device)** will leave the network device **(continuously received by NE)** in a partially configured state (e.g., "dangling" partial configuration records) that is different from the configuration state in the central data repository being used by the NMS), the NE will not send the configuration changed event notification to the EMSs until all the corresponding configurations are finished, (Col. 26, lines 29 – 36; to avoid this situation, the configuration database executes groups of SQL commands representing one configuration change as a relational database transaction, such that none of the changes are committed to the configuration database **(NE will not send the configuration changed event notification to the EMSs)** until all commands are successfully executed **(until the corresponding configurations are finished)**. The configuration database then notifies the server as to the success or failure of the configuration change and the server notifies the client).

23. Regarding **claim 14**, the rejection of claim 1 is incorporated and only further limitations will be addressed. Kidder discloses the method, wherein, the EMS actively queries the NE for the minimum unit identifier word, (Col. 63, lines 50 – 56; in computer system 10, however, command line interface changes made to configuration database 42 are passed immediately to the NMS database through the active query feature **(EMS actively queries the NE)** ensuring that the NMS, through both the configuration database and NMS database, is immediately aware of any configuration changes **(for the minimum unit identifier word)**).

24. Regarding **claim 15**, the rejection of claim 1 is incorporated and only further limitations will be addressed. Kidder discloses the method, wherein, the EMS compares the received minimum unit identifier word with that stored in it to determine which configuration data layer the changed configuration data belongs to and the configuration data changes, comprises: the EMS comparing the minimum unit identifier word with the one recorded in it, (Col. 160, lines 7 – 10; using the unique PIDs as primary keys allows for faster response times by the NMS server **(EMS)**. First the PIDs **(received minimum unit identifier word)** are used to quickly check local memory 987a **(compared with the one recorded in it)**--perhaps hash tables in a cache), if they are not identical, determining that the configuration data of the configuration data layer corresponding to the minimum unit identifier word is changed, (Col. 160, lines 10 – 12; if the data is not in local memory **(if they are not identical)**, the PIDS are used as primary keys to perform a fast data retrieval from configuration database 42 **(determining that the configuration data of the configuration data layer corresponding the minimum unit identifier word is changed)**, and determining the configuration data changes according to

change details of the minimum unit identifier word, (Col. 157, lines 18 – 20; if the PID is not found in local memory 987a, then the NMS server uses the PID as a primary key (**according to the change details of the minimum unit identifier word**) to retrieve the physical data (**determining the configuration data changes**)).

25. Regarding **claim 16**, the rejection of claim 1 is incorporated and only further limitations will be addressed. Kidder discloses the method, wherein, the step of the EMS synchronizing the changed configuration data of the corresponding NE comprises: the EMS comparing the changed configuration data with that stored in its history record to determine the changes of the configuration data, (Fig. 61b; Col. 155, lines 21 – 23; each proxy includes the PID 992a and some or all of the attribute data 992b from the corresponding managed object; Col. 156, lines 5 – 10; NMS client 850a (**EMS**) searches local memory 986 for proxies (**comparing the changed configuration data with that stored in its history record**) associated with the selected network device and if not found, the NMS client sends JAVA RMI messages to the NMS server to cause the NMS server to retrieve all physical data (**to determine the changes of the configuration data**) from the selected network device), and then synchronizing the configuration data in a predefined manner according to the changes of the configuration data of the NE, (Col. 153, lines 56 – 60; each time a physical component is changed, the NMS server sends the NMS client a full set of updated proxies to ensure that the NMS client is fully synchronized (**synchronizing the configuration data in a predefined manner**) with the network device. Alternatively, only those proxies that are affected may be updated (**according to the changes of the configuration data of the NE**).

26. Regarding **claim 17**, the rejection of claim 16 is incorporated and only further limitations will be addressed. Kidder discloses the method, wherein, the step of synchronizing the configuration data by the EMS in the predefined manner according to the changes of the configuration data of the NE, comprises: the EMS synchronizing the configuration data at a specified time, (Col. 11, lines 10 – 13; network administrator may configure periodic replication (**EMS synchronizing the configuration data**). For example, data from the master embedded database (i.e., the configuration database) can be uploaded daily or hourly (**at a specified time**)).

27. Regarding **claim 18**, the rejection of claim 16 is incorporated and only further limitations will be addressed. Kidder discloses the method, wherein, the step of synchronizing the configuration data by the EMS in the predefined manner according to the changes of the configuration data of the NE, comprises: the EMS synchronizing the configuration data immediately, (Col. 63, lines 50 – 56; in computer system 10, however, command line interface changes made to configuration database 42 are passed immediately to the NMS database through the active query feature ensuring that the NMS (**EMS**), through both the configuration database and NMS database, is immediately aware (**synchronizing immediately**) of any configuration changes (**configuration data**)), when receiving the changed minimum unit identifier word and the operation user identifier word, (Col. 87, lines 57 – 62; configuration database 42 updates NMS database 61 which sends NMS 60 (e.g., NMS Server 851a, FIG. 2a) a notification of the change including the physical identification (PID) (**when receiving the changed minimum unit identifier word**); Col. 42, lines 9 – 16; Configuration Changes tab

967b may display configuration changes made to the network device including event, time, configurer and workstation identification **(and the operation user identifier word)** from where the change was made).

28. Regarding **claim 19**, the rejection of claim 16 is incorporated and only further limitations will be addressed. Kidder discloses the method, wherein, the step of synchronizing the configuration data by the EMS in a predefined manner according to the changes of the configuration data of the NE, comprises: after receiving the changed minimum unit identifier word and the operation user identifier word, (Col. 87, lines 57 – 62; configuration database 42 updates NMS database 61 which sends NMS 60 (e.g., NMS Server 851a, FIG. 2a) a notification of the change including the physical identification (PID) **(after receiving the changed minimum unit identifier word)**; Col. 42, lines 9 – 16; Configuration Changes tab 967b may display configuration changes made to the network device including event, time, configurer and workstation identification **(and the operation user identifier word)** from where the change was made), the EMS delaying a predefined period of time before synchronizing the configuration data, (Col. 11, lines 10 – 13; network administrator may configure periodic replication **(EMS delaying before synchronizing the configuration data)**. For example, data from the master embedded database (i.e., the configuration database) can be uploaded daily or hourly **(a predefined period of time)**).

29. Regarding **claim 20**, the rejection of claim 16 is incorporated and only further limitations will be addressed. Kidder discloses the method, wherein, the step of synchronizing the

configuration data by the EMS in the predefined manner according to the changes of the configuration data of the NE, comprises: setting a manual synchronization command and the EMS synchronizing the configuration data according to the command, (Col. 98, lines 33 – 37; user may choose to manually commit the upgrade (**setting a manual synchronization command**) at his or her leisure. In the manual mode, the user would ask the NMS to commit the upgrade and the NMS would inform the master software management system (SMS) (**EMS synchronizing the configuration data according to the command**), for example, through a record in the SMS table).

Claim Rejections - 35 USC § 103

30. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

31. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kidder, in view of Hayden (US 20030225884 A1).

32. Regarding **claim 7**, the rejection of claim 6 is incorporated and only further limitations will be addressed. Kidder does not explicitly teach *the method wherein, the mixed identifier word comprises: a configuration device identifier, or a changing time identifier or a configuration item identifier, or the combination of any two or three of them.*

Hayden explicitly discloses the method, wherein, the mixed identifier word comprises: a configuration device identifier, or a changing time identifier or a configuration item identifier, or the combination of any two or three of them, (paragraph 24; each of the management storage servers 26 comprises a data storage configuration identifier (**mixed identifier word**) that relates to a storage configuration map which reflects composition of the storage system 20 and the allocation of data storage across the storage system 20 to the various application clients 16 at a point in time. The data storage configuration identifier has a value that changes when the composition of the storage system 20 changes or the allocation of storage within the system 20 changes. In one embodiment, the value of the identifier is a logical time stamp that monotonically increases as changes occur (**comprises a changing time identifier**)).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Kidder by incorporating the teaching of Hayden to provide a system for use in achieving distributed network data storage in a network and that provides the flexibility to achieve additional functionality, such as the ability to scale the data storage, stripe data, replicate data, migrate data, snapshot data, and provide shared access (Hayden; Par. 6).

Conclusion

33. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Wood whose telephone number is (571) 270-7318. The examiner can normally be reached on Monday to Friday 8:00 AM to 4:00 PM.

If attempts to reach the above noted Examiner by telephone are unsuccessful, the Examiner's supervisor, Seema Rao, can be reached at the following telephone number: (571)272-3174.

The fax phone number for the organization where this application or proceeding is assigned is 571-274-7318. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/S.W./
June 27, 2009
Steven A. Wood
Examiner
Art Unit 2416

/Kevin C. Harper/

Primary Examiner, Art Unit 2416